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(FILE 'HOME' ENTERED AT 12:48:49 ON 18 MAY 2004)  
FILE 'REGISTRY' ENTERED AT 12:59:42 ON 18 MAY 2004  
L1 1 S PEEK/CN  
SEL NAME L1  
FILE 'CA' ENTERED AT 13:00:22 ON 18 MAY 2004  
L2 975 S (PLASTIC OR TEFLON OR PTFE OR POLYTETRAFLUOROETHYLENE OR POLY  
TETRAFLUOROETHYLENE OR PEEK OR L1 OR E1-94) (6A) (STIR? OR AGITAT? OR  
MIXER OR IMPELLER OR MIXING (2A) (DEVICE OR ELEMENT OR BLADE))  
L3 710 S L2 NOT PY-1998  
L4 428 S (PLASTIC OR TEFLON OR PTFE OR POLYTETRAFLUOROETHYLENE OR POLY  
TETRAFLUOROETHYLENE OR PEEK OR L1 OR E1-94) (2A) (STIR? OR AGITAT? OR  
MIXER OR IMPELLER OR MIXING (2A) (DEVICE OR ELEMENT OR BLADE))  
L5 314 S L3 AND L4  
L6 108 S L5 AND (APPARATUS OR DEVICE) (2A) (STIR? OR AGITAT? OR MIXER OR  
IMPELLER OR MIXING)  
L7 78 S L3 AND (APPARATUS OR DEVICE) (2A) (STIR? OR AGITAT? OR MIXER OR  
IMPELLER OR MIXING) NOT L6  
L8 166 S L3 AND (REACTOR OR CATALY? OR VESSEL OR FLASK OR SHAFT)  
L9 318 S L6-8  
L10 297 S L9 NOT (MAGNETIC (1A) (STIRRER OR AGITATOR OR MIXER) OR BATTERY)  
L11 252 S L10 NOT ((CONDUCTING OR WASTE) (1A) PLASTIC OR EXTRUDER OR  
SIMULATION)  
L12 1 S (PLASTIC OR TEFLON OR PTFE OR POLYTETRAFLUOROETHYLENE OR POLY  
TETRAFLUOROETHYLENE OR PEEK OR L1 OR E1-94) (2A) ((STIR? OR AGITAT? OR  
MIXER OR IMPELLER OR MIXING) (2A) PADDLE)  
L13 227 S L11 NOT (FUEL CELL OR SCREW)  
L14 25 S L11 NOT L13  
L15 1 S L14 AND FLASK  
L16 392 S L3 NOT L9  
L17 98 S (STIR? OR AGITAT? OR MIXER OR IMPELLER OR MIXING (2A) (DEVICE OR  
ELEMENT OR BLADE)) /TI, IT, ST AND L16  
L18 75 S L17 NOT (SCREW OR EXTRU? OR MAGNETIC)  
L19 70 S L18 NOT (BATTERY OR SIMULATION)  
L20 298 S L13, L15, L19

=> d bib, ab 120 1-298

120 ANSWER 15 OF 298 CA COPYRIGHT 2004 ACS on STN  
AN 127:263161 CA  
TI A modified glass **reactor** for the preparation of linear and star-  
branched block copolymers via living anionic polymerization  
AU Storey, R. F.; Nelson, M. E.  
CS Department of Polymer Science, The University of Southern Mississippi,  
Hattiesburg, MS, 39406-0076, USA  
SO Journal of Applied Polymer Science (1997), 66(1), 151-159  
AB A modular high-vacuum system for large-scale anionic polymn. reactions  
was designed that utilizes mech. **agitation** in place of magnetic  
**stirring**, **Teflon** Rotoflo stopcocks in place of glass breakseals, and  
spherical o-ring joints in place of direct glass seals. A std. **reactor**

body was used, and depending upon reactor design, it was fitted with appropriate reactant ampules, volumetric charging cylinders, etc., to facilitate polymn., blocking reactions, and linking reactions with minimal effort. To demonstrate the efficacy of the system a no. of linear and three-arm star-block copolymers comprised of oligostyrene outer blocks and polybutadiene inner blocks were synthesized. The block copolymers were characterized by narrow mol. wt. dispersity, and the star polymers showed greater than 95% linking efficiency. The polybutadiene blocks contained approx. 40% 1,2-enchainment and were exhaustively hydrogenated using H and a Ni octoate/Et3Al catalyst.

L20 ANSWER 35 OF 298 CA COPYRIGHT 2004 ACS on STN  
AN 124:32387 CA  
TI Hydrolysis of sucrose by conventional and microwave heating in stirred tank reactor  
AU Plazl, I.; Leskovsek, S.; Koloini, T.  
CS Department of Chemistry and Chemical Technology, University of Ljubljana, Ljubljana, 61001, Slovenia  
SO Chemical Engineering Journal (Lausanne) (1995), 59(3), 253-7  
AB The kinetics of hydrolysis of sucrose to fructose and glucose under catalysis by the strongly acidic cation-exchange resin Amberlite 200C in R-H form was investigated in thermal and microwave fields using a std. lab. stirred tank reactor. A Teflon stirrer was used to eliminate the mass transport resistance and to assure a homogeneous reaction temp. which was accurately measured by a specially designed Ni-Cr-Ni thermocouple. A Teflon water cooling coil was used for maintaining const. temp. in the reactor during microwave irradiation. The rate constants for the reaction at various temps. were measured in expts. conducted in a water bath, and the Arrhenius parameters were calculated. No rate enhancements or decreases in reaction time were observed when reactions were carried out under microwave irradiation at the same reaction temp. The reaction kinetics in thermal and microwave fields did not differ.

L20 ANSWER 37 OF 298 CA COPYRIGHT 2004 ACS on STN  
AN 123:260234 CA  
TI Hydrolysis of sucrose by conventional and microwave heating in stirred tank reactor  
AU Plazl, Igor; Leskovsek, Sasa; Koloini, Tine  
CS Department of Chemical Engineering, University of Ljubljana, Ljubljana, 61001, Slovenia  
SO IChemE Res. Event--Eur. Conf. Young Res. Chem. Eng., 1st (1995), Volume 1, 502-4 Publisher: Inst. Chem. Eng., Rugby, UK.  
AB The kinetics of hydrolysis of sucrose under catalysis by a strongly acidic cation-exchange resin in R-H form was investigated in thermal and microwave fields using a std. lab. stirred tank reactor. A Teflon stirrer was used to eliminate mass transport resistance and to assure a homogeneous reaction temp. which was accurately measured by a specially designed Ni-Cr-Ni thermocouple. A Teflon water cooling coil was used for maintaining a const. temp. in the reactor during microwave irradiation. The rate constants for the reaction were measured in expts. conducted in a water bath, and the Arrhenius parameters were calculated. No rate

enhancements were obsd. when reactions were carried out under microwave irradiation at the same reaction temp. It was shown again that reaction kinetics in thermal and microwave fields did not differ.

L20 ANSWER 48 OF 298 CA COPYRIGHT 2004 ACS on STN  
AN 121:303311 CA  
TI Organosolv pulping. VII. Delignification selectivity of formic acid pulping of Eucalyptus grandis  
AU Erismann, Norma de M.; Freer, Juanita; Baeza, Jaime; Duran, Nelson  
CS Inst. Quim., Univ. Estadual Campinas, Campinas, 970, Brazil  
SO Bioresource Technology (1994), 47(3), 247-56  
AB Eucalyptus grandis wood was ca. 80% delignified in 79-92% (vol./vol.) HCOOH contg. 0.22% (w/v) HCl as a catalyst under reflux and mech. stirring for 90 min. Pulp obtained under these conditions had pulp yield, Kappa no., and Klason lignin in the ranges of 44-52%, 30-40, and 8-10%, resp. The presence of water in the expts. with the more dild. HCOOH concn. (79%) showed a beneficial effect on the pulp fiber length and pulp yield. HCOOH sawdust treatments were carried out under the best chip pulping conditions. Plots of yield vs. lignin loss showed comparable delignification selectivity for sawdust and chips. The most selective pulping expts. were those with 79% HCOOH employing a mech. stirrer blade of PTFE and those with 99% HCOOH using a stainless steel blade.

L20 ANSWER 55 OF 298 CA COPYRIGHT 2004 ACS on STN  
AN 120:220033 CA  
TI Carbon fiber-reinforced plastic impellers  
IN Iio, Hikari  
PA Nissan Motor, Japan  
SO Jpn. Kokai Tokkyo Koho, 15 pp.  
PI JP 06042302 A2 19940215 JP 1992-197261 19920723  
PRAI JP 1992-197261 19920723  
AB The title impellers, with good heat resistance and mech. strength, are prepd. from PEEK, polyetherketone, polyetherketone-polyetherimide blend, or polyether-nitrile contg. 20-40% carbon fibers or polyetherimide, polyethersulfone, or polyamideimide contg. 25-40% carbon fibers.

L20 ANSWER 75 OF 298 CA COPYRIGHT 2004 ACS on STN  
AN 115:74022 CA  
TI Dynamic mixers turn more to reinforced plastics  
AU Salzman, Ronald N.; Webster, Walter C.; Weetman, Ronald J.  
CS Lightnin, Rochester, NY, USA  
SO Chemical Engineering Progress (1991), 87(6), 39-44  
AB The use of reinforced plastics in mixers as impellers is discussed. The principal force for using reinforced plastics is the cost advantage. The A6000 impeller produces more flow/h than any other mixing impeller; the A410 is tailored to perform efficiently over a wide range of fluid viscosities.

L20 ANSWER 87 OF 298 CA COPYRIGHT 2004 ACS on STN

AN 111:133999 CA  
 TI Photochemical chlorination of pyridine with agitation of the gaseous reaction mixture  
 IN Kamei, Noboru  
 PA Daicel Chemical Industries, Ltd., Japan  
 SO Eur. Pat. Appl., 4 pp.  
 PI EP 311050 A2 19890412 EP 1988-116493 19881005  
 US 5141608 A 19920825 US 1991-719669 19910624  
 PRAI JP 1987-256104 19871009  
 AB 2-Chloropyridine (I) and 2,6-dichloropyridine (II) are prep'd. by gas-phase chlorination of pyridine (III) under UV irradiation, with agitation of the reaction gas mixture or by recirculation of the mixture with a blower. This method gives yields as much as several times those of prior methods, and enables long-lasting, stable operation without problems such as clogging. A 5-L app. with a 100 W high-pressure Hg arc lamp and Teflon agitator at 200 rpm was fed at 130° with III 900, H2O (diluent) 410, and Cl 88 g/h to give 83.6% conversion of III and 95.5% reaction of Cl fed; the product, obtained at 620 g/h, contained I 80.6, II 34.0, and III 14.8 g/h. An identical run without agitation gave 26.4% conversion and 39% reaction of Cl, with product containing I 11.0, II 24.1, and III 66.2 g/h.

L20 ANSWER 91 OF 298 CA COPYRIGHT 2004 ACS on STN  
 AN 110:137575 CA

TI A new mixer for the chemical process industries  
 AU Salzman, R. N.; Webster, W.; Muratore, G.; Page, P. K.  
 CS Mix. Equip. Co., Rochester, NY, USA  
 SO Proceedings of the European Conference on Mixing (1988), 6th, 79-84  
 AB A composite mixer shaft and impeller are presented that give better performance than the metal alternative. The mechanical design of these units combines aerospace structural concepts with chemical process industry experience for the resin system. A decrease of structural weight is achieved with the fiber-reinforced plastics. A decrease in weight enables designs with longer shaft lengths or higher allowable speeds. To improve mixer efficiency, impeller-design concepts were studied using a laser Doppler velocimeter, to optimize the flow per power unit volume. Thus, an impeller is developed with Proplet tips, which are similar to the winglets being used on subsonic aircraft. By shifting from metals to composites, manufacturing procedures enabling efficient impeller designs are possible. The A6000 impeller produces ~20% more flow power than the most efficient metal impeller tested. This efficiency translates directly into lower operating costs for a broad range of mixer applications.

good includes PERK  
 L20 ANSWER 94 OF 298 CA COPYRIGHT 2004 ACS on STN  
 AN 109:233262 CA

TI Structural composite mixers  
 AU Salzman, Ronald N.; Webster, Walter C.; Lally, Kenneth S.  
 CS Mixing Equip. Co., Rochester, NY, 14611, USA  
 SO Chemical Engineering Progress (1988), 84(11), 50-5  
 AB Process results, shaft design, material selection, abrasion resistance,

and strength/durability are discussed with respect to advantages of **mixers** that are constructed of fiber-reinforced **plastics**. Examples of applications are given.

L20 ANSWER 112 OF 298 CA COPYRIGHT 2004 ACS on STN

AN 105:46766 CA

TI Ultrafine metal cobalt particle dispersion

IN Kohitsu, Masamichi; Kondo, Sei

PA Nissan Chemical Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

PI JP 61069906 A2 19860410 JP 1984-191942 19840913

PRAI JP 1984-191942 19840913

AB Co carbonyl compd. in an org. solvent is placed in a reaction **vessel** made of inert material(s), and is thermally decompd. The inert material(s) are preferably selected from polytetrafluoroethylene, polytrifluorochloroethylene, perfluoroalkyl vinyl ether-tetrafluoroethylene copolymer, hexafluoropropylene-tetrafluoroethylene copolymer, ethylene-tetrafluoroethylene copolymer, ethylene-trifluorochloroethylene copolymer, Al, stainless steel, and Cu. The ultrafine Co particles have high purity, and are useful as magnetic materials, superconductive materials, light and electromagnetic wave absorbing materials, photosensitive materials, semiconductors, powder metallurgy, and **catalysts**. Thus, Co<sub>2</sub>(CO)<sub>8</sub> 58, and toluene 500 g were placed in a polytetrafluoroethylene reaction **vessel**, refluxed in a N atm. at 110° with **stirring** by **polytetrafluoroethylene stirrer** to evolve CO, and allowed to cool to give an ultrafine metal Co particle dispersion (av. particle size 1400 Å).

L20 ANSWER 126 OF 298 CA COPYRIGHT 2004 ACS on STN

AN 101:133072 CA

TI Gas-tight laboratory **stirring device** needing little lubrication

IN Heering, Robert; Neumann, Hansjoachim

PA Ernst-Moritz-Arndt-Universitaet, Ger. Dem. Rep.

SO Ger. (East), 6 pp.

PI DD 203469 A1 19831026 DD 1982-237895 19820305

PRAI DD 1982-237895 19820305

AB The gas-tight lab. stirrer consists of a stirrer **shaft**, a sleeve, and sealing rings placed in the annular space between the **shaft** and sleeve. The device is made of a chem.-resistant material (esp. polytetrafluoroethylene), needs little lubrication, and is attached to the glass reaction **vessel** by using conical or flat ground joints.

L20 ANSWER 167 OF 298 CA COPYRIGHT 2004 ACS on STN

AN 89:138442 CA

TI A laboratory scale evaporative crystallizer

AU Mullin, John W.; Broul, Mirec

CS Dep. Chem. Eng., Univ. Coll., London, UK

SO Chemistry & Industry (London, United Kingdom) (1978), (7), 226-8

AB The title app. is described which can be operated under isothermal conditions and enables detn. of the effects of temp., evapn. rate, and stirrer type and speed on crystal habit size and size distribution.

The enclosed crystn. vessel is fitted with Perspex baffles just above a PTFE anchor-type stirrer driven by a const. speed motor. The vessel is heated by a mantle with heat output which can be varied according to the temp. inside the vessel from which the water vapor is removed by a vacuum pump via 2 condensers and protective drying tower. The system also contains a pressure-regulating contact manometer which is manually adjusted every 5 min and activates an electromagnet valve which opens or closes the line to the pump. Expts. on K<sub>2</sub>SO<sub>4</sub> are described.

L20 ANSWER 176 OF 298 CA COPYRIGHT 2004 ACS on STN

AN 83:107611 CA

TI Effect of stirring on the reduction current in constant potential coulometry

AU Rutkowski, Wladyslaw; Sobkowska, Aleksandra

CS Dep. Anal. Chem., Inst. Nucl. Res., Warsaw, Pol.

SO Chemia Analityczna (Warsaw, Poland) (1975), 20(2), 383-8

AB The effect of the shape and material of the stirrer, the depth of immersion, and rate and constancy of revolution on the initial current (*i*<sub>0</sub>) was investigated by using the redn. of U(VI) to U(IV) on a Hg electrode as an example. The best results were obtained by using a cylindrical Teflon stirrer with vertical cuts; in this case *i*<sub>0</sub> depended little on the depth of immersion or rate of revolution. Intensive and correct stirring of the soln. can significantly decrease the time in coulometric anal. and improve the precision and accuracy of the detn.

L20 ANSWER 190 OF 298 CA COPYRIGHT 2004 ACS on STN

AN 78:149225 CA

TI Boiling rate control in vacuum distillation

AU Tilney-Bassett, Julian F.

CS Cotton Coll., Oakamoor/Stoke-on-Trent, UK

SO Chemistry & Industry (London, United Kingdom) (1973), (4), 192

AB A trouble-free distn. is achieved by using vacuum stirrer glands for vacuum distn. The std. stirrer glands are suitable for larger flasks and should be fitted with a polytetrafluoroethylene anchor-blade stirrer. For a small-scale app., a ball and socket joint is satisfactory, and may be fitted with a joint and screw blade. Under these conditions, 1 mm can be achieved on the vacuum gage.

D20 ANSWER 224 OF 298 CA COPYRIGHT 2004 ACS on STN

AN 67:50027 CA

TI A centrifugal stirrer for rapid mixing in square cuvetts during spectrophotometric measurements

AU Conrad, Richard H.

CS Johns Hopkins Univ., Baltimore, MD, USA

SO Analytical Chemistry (1967), 39(8), 1039

AB A Teflon centrifugal stirring device is presented which provides rapid mixing in a 1-cm. sq. cuvet used in spectrophotometric titrns. and spectrophotometric detns. of initial reaction velocities. Rapid vertical and horizontal mixing is obtained with a min. of vortexing. Added aliquots are equilibrated in <1 sec.

120 ANSWER 228 OF 298 CA COPYRIGHT 2004 ACS on STN

AN 66:106346 CA

TI Noncorrosive centrifugal pump

IN Copeland, Wayne E.

PA Aetna Chemical Corp.

SO U.S., 5 pp.

PI US 3304875

AB The pump housing and **impeller** are molded from polycarbonate "Lexan"

**plastic**. The **shaft** is formed of Ti and it is inserted into a counterbore in the elec. motor **shaft** in axial alignment with the motor **shaft**. The pump **shaft** and motor **shaft** are coupled with pins. The end of the pump **shaft** is formed into a hexagon and fits into the hexagon aperture at the center of the impeller thus allowing the pump to be reversed without decoupling tendencies. The seal assembly includes a stationary seal mounted on the pump housing and a rotating seal which rotates with the pump **shaft**.

120 ANSWER 273 OF 298 CA COPYRIGHT 2004 ACS on STN

AN 47:64427 CA

OREF 47:10907a

TI **Plastic stirrer blades**

AU Shellman, Vernell R.; Magerlein, Barney J.

CS Upjohn Co., Kalamazoo, MI

SO Anal. Chem. (1953), 25, 1285

AB **Teflon** (polymeric tetrafluoroethylene) was used for lab. **stirrer** blades.

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